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Solving Complex Business Problems

Federal Strategic Sourcing Initiative

Market Analysis - Telecommunications Expense Management (TEM) Market

Wireless Handheld Devices and Services Team

Washington, DC

12 November 2006

GSA U.S. General Services Administration

Contents

- **Executive Summary**

- **Telecommunications Expense Management (TEM) Service Providers**

    - **Market Overview**

    - **Supply Base Capabilities**

    - **Business Case Rationale**

- **Implications to Sourcing Strategy**

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The TEM market encompasses software and services to acquire, provision, and support corporate telecommunications

Telecom Expense Management (TEM) is the methodology by which organizations can manage all aspects of their telecom expenses.

- TEM includes software solutions, consulting, business process outsourcing (BPO), and hosted application services that reduce unnecessary telecommunication costs.

- TEM solutions can potentially reduce total costs through systematic and strategic sourcing of services and ongoing contract compliance.

- An effective TEM solution collects vital data and provides timely reporting about expenses to drive strategic decisions that enable an enterprise acquisition and operations investment to optimize its investment in telecommunications and better focus on its core offerings.

- The prime focus of TEM is consolidation of all invoice receipts and bill payments combined with asset inventory, ordering, tracking, management and reporting of wireless service

  - Along with the push it gives to centralized invoice management, TEM software consolidates all the information on carrier tariffs and contracts into a single database.

  - Having consolidated all that information, the software can identify bills that do not conform to contract terms and even recommend different combinations of contracts that will save money.

Note: While TEM solutions address all areas of communications, including long distance, wireless, local voice, data networks, PBX, calling cards, conferencing, and pagers, this report focuses on wireless services.

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Executive Summary

KEY OPPORTUNITY AREAS

The supply market analysis suggests the following as key sourcing opportunity areas for the Wireless Services commodity:

1. Potential for using Telecommunications Expense Management (TEM) service providers to provide improved management reporting and visibility into an agency's wireless spending and usage

2. Opportunity to lower total cost of ownership by using TEM service providers as a critical part of an overall strategy to standardize wireless devices/airtime, streamline ordering and billing processes, and enforce wireless policy compliance
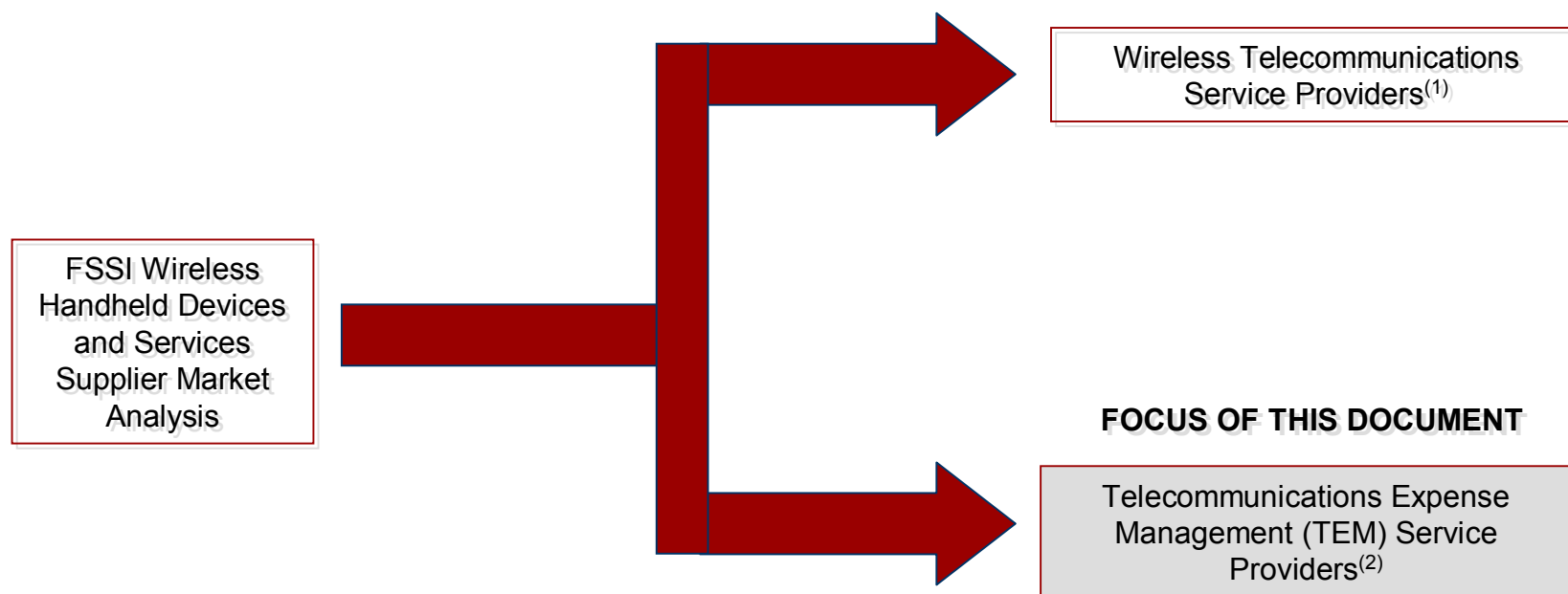
EXECUTIVE SUMMARY HIGHLIGHTS

- The need for telecom expense management (TEM) providers is growing as telecommunication becomes more complex, especially with enterprises adding more wireless services. As a result, the TEM industry in North America is estimated to grow at a CAGR of 40% during 2006-2010.

- Core service offerings of vendors across the industry are similar. The difference primarily lies in execution and professional expertise.

- The TEM market is evolving from smaller businesses to larger, more capable suppliers. However, the industry is fragmented and there is significant presence of small vendors who do not have the scale and capabilities to serve very large customers.

- Competition is intense, with customers increasingly looking for better quality of services than a lower price.

- Various pricing models are followed by the vendors. Pricing based on number of devices is the most common method used for wireless services.

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This market analysis is focused on an evaluation of the Telecommunications Expense Management (TEM) providers

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                                              ┌─────────────────────────────┐
                                              │  Wireless Telecommunications │
                                         ───► │  Service Providers[1]        │
                                              └─────────────────────────────┘
┌─────────────────────┐
│ FSSI Wireless       │
│ Handheld Devices    │ ───┐
│ and Services        │    │
│ Supplier Market     │    │        FOCUS OF THIS DOCUMENT
│ Analysis            │    │
└─────────────────────┘    │        ┌─────────────────────────────┐
                           └──────► │ Telecommunications Expense  │
                                    │ Management (TEM) Service     │
                                    │ Providers[2]                 │
                                    └─────────────────────────────┘
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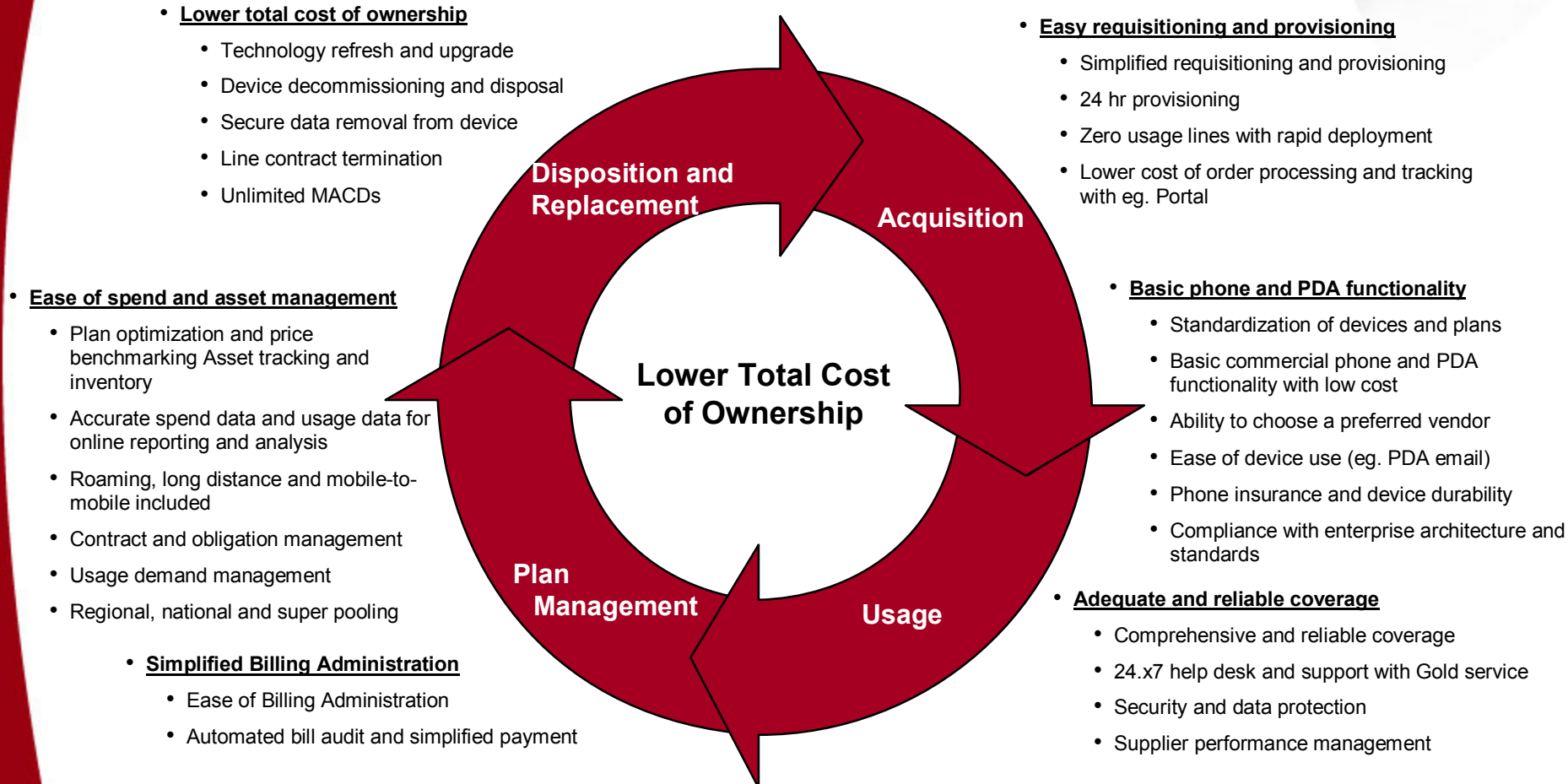
(1) This group of suppliers are typically referred to as the wireless service "carriers" (e.g. Cingular, Verizon,)
(2) This group of suppliers provide a number of "managed services" such as consolidated billing, inventory management, provisioning, as well as access to and optimization of plans offered by the carriers

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Agencies have expressed the need to provide total lifecycle management of wireless services – this analysis focuses on the ability of TEM suppliers to meet those needs

LIFECYCLE MANAGEMENT OF WIRELESS SERVICES

- **Lower total cost of ownership**
  - Technology refresh and upgrade
  - Device decommissioning and disposal
  - Secure data removal from device
  - Line contract termination
  - Unlimited MACDs

- **Ease of spend and asset management**
  - Plan optimization and price benchmarking Asset tracking and inventory
  - Accurate spend data and usage data for online reporting and analysis
  - Roaming, long distance and mobile-to-mobile included
  - Contract and obligation management
  - Usage demand management
  - Regional, national and super pooling

- **Simplified Billing Administration**
  - Ease of Billing Administration
  - Automated bill audit and simplified payment

- **Easy requisitioning and provisioning**
  - Simplified requisitioning and provisioning
  - 24 hr provisioning
  - Zero usage lines with rapid deployment
  - Lower cost of order processing and tracking with eg. Portal

- **Basic phone and PDA functionality**
  - Standardization of devices and plans
  - Basic commercial phone and PDA functionality with low cost
  - Ability to choose a preferred vendor
  - Ease of device use (eg. PDA email)
  - Phone insurance and device durability
  - Compliance with enterprise architecture and standards

- **Adequate and reliable coverage**
  - Comprehensive and reliable coverage
  - 24.x7 help desk and support with Gold service
  - Security and data protection
  - Supplier performance management

Disposition and Replacement — **Acquisition** — **Lower Total Cost of Ownership** — **Plan Management** — **Usage**

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The TEM industry is comprised of both the Wireless Service Providers and companies primarily focused on telecom managed services

Snapshot of TEM Industry

Wireless carriers such as Verizon and Sprint Nextel have entered the TEM market (most recently Verizon in May 2006), but despite their large scale of operations, they have not acquired significant market share.

TEM Vendors
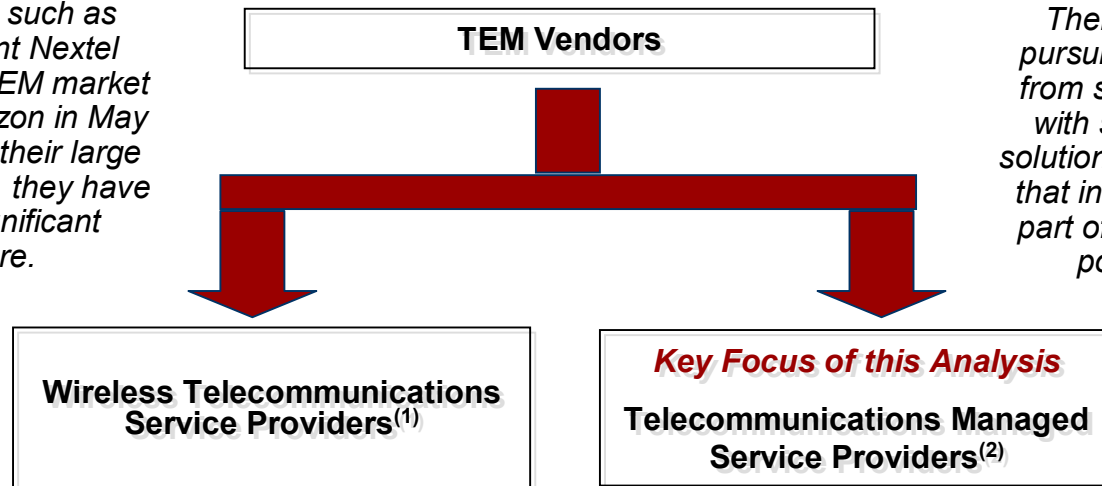
There are many vendors pursuing this space, ranging from small software vendors with simple billing analysis solutions to large BPO vendors that include wireless TEM as part of a broader outsourced portfolio of services.

Wireless Telecommunications Service Providers[1]

Key Focus of this Analysis

Telecommunications Managed Service Providers[2]

Note: (1) This group of suppliers are typically referred to as the wireless service "carriers" (e.g. Cingular, Verizon,)
(2) This group of suppliers provide a number of "managed services" such as consolidated billing, inventory management, provisioning, as well as access to and optimization of plans offered by the carriers

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TEM vendors have surfaced from several different segments of the telecom industry

TEM Supply Market Segmentation

Diversified Companies	Pure-play TEM Service Providers	Wireless TEM Service Providers
CSC	*Vercuity*	*Integrated Mobile*
Accenture	*Control Point Solutions*	*BBR Wireless*
Bearing Point	*ProfitLine*	*Traq Wireless*
Advantage IQ	*Tangoe*	*Movero Technology*
Symphony Services	*Rivermine*	*mindWireless*
	Avotus	*MobilSense*

Diversified Companies:

- Offer services including data modeling, IT consulting and software solutions such as supply chain management.

- *As the industry witnesses growth, large IT companies such as IBM and EDS are also expected to start offering TEM.*

Pure-play TEM Service Providers:

- Service offerings can include a combination of consulting or professional services, software solutions, hosted applications providers and fully managed solutions.

- *Pure play TEM vendors are the most active players in the industry.*

Wireless TEM Service Providers:

- Provide only wireless TEM services.

- Offer a host of TEM solutions including software licensing, hosted applications and end to end TEM managed solutions.

- **Majority of TEM vendors have come out of wireline business, while others have sprung up to provide managed wireless services.**

- **Most large vendors provide wireline as well as wireless TEM.**

- **Not many vendors provide only wireless TEM services and these companies are typically smaller than players that offer both wireline and wireless TEM.**

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TEM vendors can range from pure-play software companies to fully outsourced service providers

TEM Supply Market Segmentation by Delivery Models

Delivery Model	Service / Solution Description	Examples of Service Providers
Licensed TEM software providers	• TEM software solution is licensed by the client. • Process, equipment and software is owned and operated by client.	• **Tangoe, Rivermine, Asentinel, Quickcomm, VCOM, Symphony Services, Telebright**
Hosted software/managed application service providers (ASPs)	• Vendors configure, maintain and support expense management hardware and software which they hosted. • Periodic reports are provided to management.	• **Tangoe, Avotus, Rivermine, Symphony Services, Invoice Insight, Asentinel, VCOM, MBG, Telebright**
Full service TEM providers	• Vendor manages the entire expense lifecycle from sourcing to payment. • Vendors leverage intelligent rules-based software for transactional tasks (i.e. invoice processing, validation etc.) and also provide a range of professional services to reengineer and optimize existing processes.	• **Tangoe, ProfitLine, Symphony Services, Control Point Solutions, Vercuity, Avotus, Rivermine, Advantage IQ, MBG, Invoice Insight, Telebright**

As the US TEM market continues to grow, some software vendors are beefing up to provide full outsourced solutions, while full service providers are offering an option for hosted software. A small number of TEM vendors offer all three options.

Note: This report focuses on full service TEM vendors

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The market is projected to grow to $1.5 billion in 2010, up from an estimated $400 million in 2006

North American TEM Market ($ million)

CAGR (2006 – 2010): 40%

Year	Value
2006	400
2008	1200
2010	1500
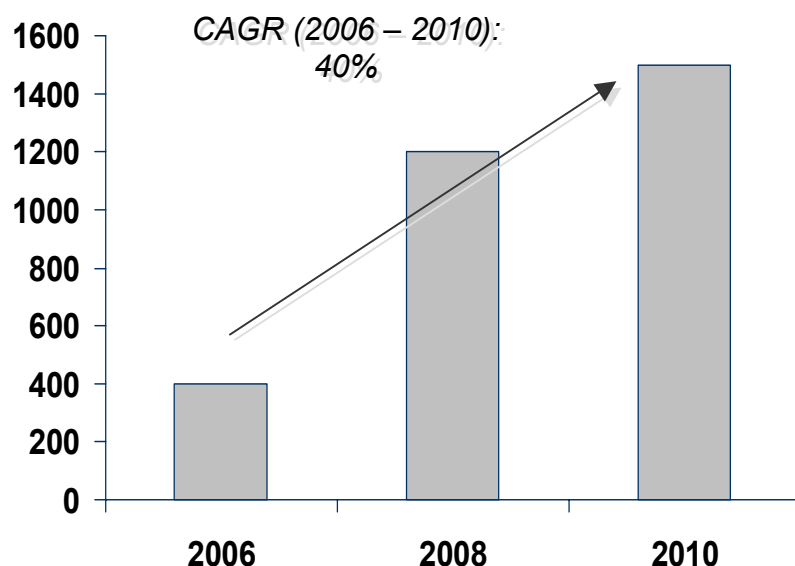
Source: Gartner (October 2006)

TEM remains a nascent industry in the US, with market dynamics changing rapidly

- The industry continues to increase in scope and maturity as vendors' service offerings become more comprehensive. Enterprises are showing a strong interest in solutions that manage telecommunications assets more effectively.

- Wireless telecom is becoming more difficult for an enterprise to handle, given the multiple carriers, multiple devices and multiple services offered.

- As a result, an increasing number of companies are turning to TEM solutions to cut expenses and manage their networks, sparking strong industry growth projections.

- The number of contracts signed and bid proposals issued slowed significantly in 4Q05, but 2006 has been a busy year in terms of companies purchasing TEM solutions.

Given that the industry is still nascent and maturing, capabilities and risk of vendors must be carefully assessed when making sourcing decisions.

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Industry growth is being driven primarily by complexities of telecom and wireless management

US TEM Industry - Key Growth Drivers

Technology
• Telecommunications is undergoing change with widespread growth of wireless services and a shift from traditional voice networks to data-centric networks with Voice over Internet Protocol (VoIP) and multi-protocol label switching (MPLS) technology. • Enterprises are increasingly challenged to manage their wireless services since there are many more services and applications being used (such as blackberry). • Growing costs associated with rapid expansion of new technology, data services, and wireless communications networks represent a significant expense for companies.

Carrier Consolidation	Security Concerns
• Carrier consolidation has resulted in changes in billing mechanisms of carriers and proliferation of services offered, resulting in greater number of errors in invoices. • Consolidation is also creating demand for accurate information on spending to gain leverage in negotiating contracts.	• Despite the benefits of business mobility, many organizations express concern about the potential of security violation. • There are concerns about access to sensitive data that is not centrally managed. • Communications and the devices that store this sensitive data also need to be secured.

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Although TEM vendors provide a myriad of applications and services, they all offer similar value proposition: elimination of unnecessary costs

Services Offered by TEM Vendors

- Reporting mechanism for enterprises to visualize and analyze aggregate telecom spend and usage — across all services, vendors, and business units — allowing for simplified decision making.

- This is the core function of TEM and includes receipt and maintenance of bills.

- All bills are converted to a standardized electronic format and entered into centralized database.

- Invoices can also be coded for reporting and analysis.

- Provision of multiple payment options, including a payment feed enabling companies to issue checks or allowing TEM providers to pay the invoices on behalf of companies.

- Validation of invoice charges against contracts and inventory.

- Also includes billing assurance, compliance, accuracy and reconciliation.

- Some vendors offer dispute resolution and recovery in case of refunds.

Usage Reporting

Bill Payment

Invoice Management

Core Offerings of TEM

Auditing

Rate Optimization

Order and Procurement

Inventory Management

- Identification of opportunities to reduce costs through benchmarking of carrier rates, contract renegotiation etc.

- Develop processes for sourcing of services as well as handsets

- Contract negotiations and procurement .

- Complete an accurate record of all mobile phones, blackberry, PDA, etc.

- Inventory rightsizing.

Sourcing Implications/ Questions

- What is the relative importance of each of these services to the government?

- Should agencies allow the TEM vendors to also negotiate directly with the wireless providers?

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Most companies providing TEM services in the US are small in size and do not have the required scale to cater to large customers

While there are a few major players in the industry that have experience with large clients…

- The need for scale by TEM vendors has driven a spate of acquisitions in the industry.

- A few large players in the market have been formed through consolidation in the last few years.

- Key deals include

  - **Vercuity** (formerly MSS group) merged with Telwares (telecommunications procurement and contract negotiations provider) to create one of the largest TEM service providers in the US (2004).

  - Merger between Broad:margin and Teldata Control to form **Control Point Solutions** (2004).

  - Acquisition of Fedcel by **ProfitLine** (2006).

… there is a significant presence of small businesses that do not have a track record with large clients or lack scale and financial stability

- Large enterprises that spend more than $100 million annually on telecom have concerns when they outsource or buy software solutions from smaller vendors.

- According to Gartner, most TEM providers in the US generate less than $2 million in annual revenues.

- Most smaller vendors cannot scale readily, while maintaining high service levels, to provide comprehensive outsourcing solutions for large clients.

- Enterprises do not want to take on the risk of business disruptions from network disconnections if bills are not processed on time or software fails to work as promised.

Completely outsourced TEM services require complex, ongoing professional services. There are significant risks in selecting a small vendor. Utilizing a proven vendor saves the time and cost of building a proprietary solution, leverages deep TEM expertise and optimizes resources for core competencies.

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Large vendors have superior technology and are able to serve their clients more efficiently (1 of 2)

Key differences between service offerings of large and small TEM vendors

Software/Technology

- The technology platform used by smaller players is not as robust as that of larger vendors.

- Without an effective technology platform, data aggregation can be tedious. A few smaller companies cannot handle large volume of paper invoices.

- Smaller vendors often use third party software/tools. Large vendors, on the other hand, invest continuously in maintenance and upgradation of their technology.

- Billing data can be input into TEM manually from paper bills, it can be loaded from billing CDs or downloaded from the carriers' web-based account management systems. The manual approach is least effective because of higher chances of error.

Reporting Capabilities

- There could be differences in degree of automation at the client end, particularly for wireless.

- Not all vendors provide a real-time, web-enabled dashboard with drill-down menu for downloading customized spend and inventory reports.

- The level of detail that a supplier can process may vary by carrier. In some cases it depends on the carrier's billing media. In other cases, it comes down to the core strengths and weaknesses of suppliers.

- As a result of superior technology, large players are typically able to generate reports faster and with greater level of insights.

Professional Expertise

- Small players do not have access to specialists for providing professional services. Many of these players work with subcontractors who might not be domain experts.

- Large companies have experience with greater number of clients.

- Accurate analysis of reports, procurement of devices and contract negotiations requires high level of expertise by seasoned professionals.

- The experience and level of expertise of temporary staff is questionable and can impact overall effectiveness of the TEM solution.

Note: Only a few large vendors have SAS 70 certification, a measure of robust controls under Sarbanes Oxley

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Large vendors have superior technology and are able to serve their clients more efficiently (2 of 2)

- While most TEM vendors offer similar services, the difference lies in execution.

- While a small vendor might be able to provide one or two services such as auditing and invoice processing for a large client, completely outsourced TEM solutions offered by large players are more robust.

- The key challenge for a large organization will be to select a TEM provider that will deliver exceptional customer service with technology that will deliver automation and best practices while allowing the client to stay involved and in control with visibility of their infrastructure.

- *"There are companies out there that have the bodies to throw at the internal processing of expense and order activities, but lack the technology that enables control and visibility for the client."* - Dan Hannah, Director, Sales and Marketing, Telebright (2006)

Examples of Differences in Service Offerings of TEM Vendors

Small

- **Auditel** - a small TEM vendor, does not have an in-house software and inputs data into the system manually.

Mid-size

- **BBR Wireless** - the development of its ratings engine is outsourced, so any changes or customization to the interface may not be as timely or as robust as competitors that have in-house technology.

Large

- **Avotus** takes a unique approach to automating the procurement process, with its database of current market prices and an automated RFP and reverse auction process.

- One of **ProfitLine's** differentiators is the large database of business intelligence the company has built from all the transactions it has handled over the years.

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There are significant economies of scale in TEM industry, which favor larger BPO providers

Economies of Scale in the TEM Industry

Customer's Perspective

- Vendors have standardized applications across clients.

- As a result, overall costs are lower for these specialists to process an invoice, compared to a customer that does it in-house.

Vendor's Perspective

- Once the technology platform and processes have been established, with every additional invoice that is processed, cost efficiency increases and economies of scale are achieved.

Economies of scale are greater when invoices are processed electronically as manual processes are labor-intensive.

Key Cost Drivers for a TEM Vendor
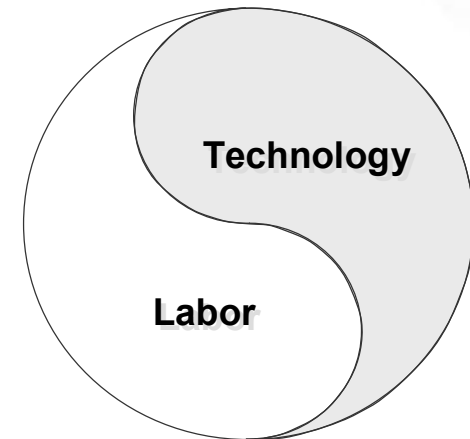
Technology

Labor

- **Technology**: While the initial investment in technology is a sunk cost for the company, constant upgrades are required to keep the infrastructure up to date.

- **Labor**: Labor is a key cost driver particualrly in BPO model as there are greater number of professional services provided by the vendor.

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While major TEM vendors have entered into alliances to strengthen market position, small vendors partner primarily to enhance services

- Apart from merging or buying competitors, TEM suppliers are partnering with carriers, integrators and other TEM vendors to expand their sales reach, capabilities, and provide the scale necessary to serve large enterprises.

- *BBR and Traq Wireless have been able to shift from being providers of niche services to offering broader end-to-end solutions through their partnerships with wireline TEM vendors, while ProfitLine has been able to win a few large government contracts due to its strategic sales partnership with iSYS, LLC.*

Company	Key Alliances
Tangoe	• Alliance with network solutions provider Calence. Tangoe supports Calence's expanding TEM practice while Calence utilizes Tangoe's software platform for its TEM offerings.
ProfitLine	• Partnership with A&T Systems to provide TEM services to federal government agencies via a variety of A&T government-wide contract vehicles known as TeamUSA. • ProfitLine has a number of strong relationships with integrators.
MBG	• Commercial arrangements with AT&T, BellSouth and Verizon Business for providing their clients with sophisticated invoice analysis capabilities. • CSC managed the company's services to a global hotel chain.
Others	• Rivermine and Vercuity both have partnerships with integrators and carriers.
BroadSource	• Strategic sales alliance with Data Processing Sciences Corp., a leading value added reseller and integrator. • Partners with BBR Wireless for providing wireless optimization services.
Invoice Insight	• Partnerships with third-party organizations for invoice payment services.
PinPoint Management	• Partnership with Tangoe to utilize its patented software as the technology foundation for their TEM offering.

Mid-large vendors / *Small vendors*

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Bureaucracy is a key issue for vendors serving government organizations

- While a few large vendors are focusing on winning government contracts for TEM, some others believe there are a few challenges in serving the sector.
- ProfitLine is by far the leader in this area. Several agencies, including the Department of Homeland Security (DHS) and the Transportation Security Administration (TSA), have embraced the company's outsourced services.

- Government is a key focus area for ProfitLine, and the company has won/renewed four major wireless TEM contracts from various government agencies in 2006.
- Tangoe, another major TEM vendor, has not provided solutions for the government to date, but is now focusing on the sector. The company believes there are significant opportunities in the sector.
- *"Government has become a very big market for us. Government agencies have large telecom bills, encompassing both wireline and wireless services. All that stuff just begs to be managed."* – Stephen Hundley, President and CEO, ProfitLine (2006)

- **Bureaucracy:** Government contracts take longer to materialize and there is a lot of paper work involved. Even after a contract has been entered into, the funding and decision cycles of government agencies are lengthy.
- **Large volume:** Government agencies are geographically diversified and receive a large number of invoices, including paper invoices that require manual processing.
- **Other challenges:** Security of processes and infrastructure and regulatory compliance.
- Government is not a key vertical for companies such as Avotus and MBG due to the complexities involved in managing such contracts.

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Despite entry of major carriers into the TEM space, most customers are likely to opt for third party providers

verizon

at&t Your world. Delivered.

- Verizon offers managed TEM services for wireline and wirleless expenses, including dispute resolution and recovery.

- It is also working with a TEM software company that specializes in monitoring wireless services and devices.

Key Carrier Offerings

- AT&T's online BusinessDirect portal provides the company's clients with TEM services including ordering, asset management, trouble tickets, and e-billing.

- The carrier also offers professional services.

Carriers vs. Third Party TEM vendors

Carriers have the scale to serve large customers

- Carriers can leverage existing relationships to build process efficiencies that come from handling large volumes of telecom spend.

- Third party vendors rarely have the expertise and financial resources that are presented in the package Verizon has assembled.

However, industry watchers have raised concerns about conflicts of interest with carriers entering the TEM market

- Carriers do not have access to a competitor's billing mechanism, while TEM specialists develop expertise and a detailed understanding of each carrier's billing platforms.

- Managed services companies can be carrier agnostic, providing a full range of services using multiple providers. Carriers might not be as objective in providing TEM services, especially if they are processing their own bills.

- *"Its like a fox watching a hen house. Especially when you consider that 20% of the problem (for TEM vendors) is finding the error and 80% is getting the carriers to pay up."* – Peter Firstbook, Program Director, Meta Group

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Basic TEM offerings are similar across large as well as small vendors (1/2)

TEM Supplier[1] Segmentation by Service Provided

Large Players

	Control Point Solutions	Tangoe	Advantage IQ	Vercuity	ProfitLine	Avotus	Rivermine
Inventory Management	✓	✓	✓	✓	✓	✓	✓
Procurement Management	✓	✓	✓	✓	✓	✓	✓
Invoice Management/ Payment	✓	✓	✓	✓	✓	✓	✓
Usage Reporting	✓	✓	✓	✓	✓	✓	✓
Invoice Auditing	✓	✓	✓	✓	✓	✓	✓
Wireless Optimization	✓	✓	✓	✓	✓	✓	✓
Dispute and Recovery Management	✓	✓	✓	✓	✓	✓	✓
Contract Negotiation	✓[2]	✓	✓	✓	✓	✓	✓
Help Desk Services	✓	✓[3]	✓	✓	✓	✓	✓
In-house Software Solution	✓	✓	✓	✓	✘	✓	✓

Note: (1) Includes wireline and wireless service providers. Only full service providers have been included. All services have been confirmed by speaking to senior executives at the companies. NA = Not available.
(2) Contract negotiation is not a key service area for Control Point
(3) Help desk services do not include technical support for problems such as lost phones, activation etc.

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Basic TEM offerings are similar across large as well as small vendors (2/2)

TEM Supplier[1] Segmentation by Service Provided

Small and Mid Size Players

	BBR Wireless	Invoice Insight	MBG	Telebright	TSR	BroadSource	Abilita	Advocate Networks
Inventory Management	✔	✔	✔	✔	✔	✔	✔	✔
Procurement Management	✔	✔	✔	✔	✔	✔	✔	✔
Invoice Management/ Payment	✔	✔	✔	✔	✔	✔	✔	✔
Usage Reporting	✔	✔	✔	✔	✔	✔	✔	✔
Auditing	✔	✔	✔	✔	✔	✔	✔	✔
Wireless Optimization	✔	✔	✔	✔	✔	✔	✔	✔
Dispute and Recovery Management	✔	✔	✔	✔	✔	✔	✔	✔
Contract Negotiation	✔	✔	✔	✔	✔	✔	✔	✔
Help Desk services	✔	✔	✔[3]	✔	✔	✔	✖	✔
In-house Software Solution	✔	✔	✖	✔	✖[2]	✔	✖	✖

Note: (1) Includes wireline and wireless service providers. Only full service providers have been included. All services have been confirmed by speaking to senior executives at the companies. NA = Not available.
(2) TSR uses third-party software for wireless, but has in-house software for wireline
(3) Help desk services do not include technical support for problems such as lost phones, activation etc. However, MBG has a tie up with Traq Wireless for the same

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A few large vendors have global capabilities, while others operate in North America; most vendors have worked with the government (1/4)

Key Vendor Statistics

	Key Statistics	Clientele	Geographic Presence	Experience with Government Contracts
Control Point Solutions	Sales: $41 million Employees: 400+ Total telecom spend under management: $7 billion	• Serves over 70 Fortune 500 clients • Minimum annual telecom spend by clients: $0.7 million • Largest client spends $300 million on telecom annually	• Serves companies nationwide • Through its alliance partners it has coverage for clients in EMEA region	Has experience with GSA Connections and Treasury Fedsource *(only auditing and dispute resolution)*
Tangoe	Sales: Not Avail. Employees: 140 (90 in R&D) **Small Business**	• Minimum annual telecom spend by clients: $1 million • Largest client spends $420 million on telecom annually	• Serves companies in North America, Europe and Asia Pacific	*No experience at present but the company is focusing on the sector*
Advantage IQ	Sales: Not Avail. Employees: 400 **Small Business**	• Minimum number of cell phones: 200	• Serves clients across North America	Yes *(only auditing)*
Vercuity	Sales: $40 million Employees: 390 Total telecom spend under management: $4.4 billion **Small Business**	• Fortune 1000, Global 2000 and middle-market companies • Annual spend of largest client (wireless): $16 million	• National presence with offices in five states • Provides services for global companies	Assisted local, state, and federal agencies in telecom expense management. *Not a focus area for the company.*

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GSA U.S. General Services Administration

A few large vendors have global capabilities, while others operate in North America; most vendors have worked with the government (2/4)

Key Vendor Statistics

	Key Statistics	Clientele	Geographic Presence	Experience with Government Contracts
ProfitLine	Sales: $32 million Employees: 144 **Small Business**	• Serves only Fortune 1000 companies with minimum 1000 wireless devices. • Average annual wireless telecom spend for clients: $4.8 million • Over 100,000 wireless devices under management	• Services clients across North America • Serves clients at global level	Working with US Postal Service, Homeland Security, Transportation Security Department, Centers for Disease Control and Prevention and others *(complete outsourcing)*
Avotus	Sales: $31 million Employees: 200 Total telecom spend under management: $4 billion **Not listed in CCR**	• Average annual telecom spend by client: $10 million	• Serves clients nationally with offices across North America • International presence includes Central America, UK, Australia and New Zealand	No
Rivermine	Sales: $17 million Employees: 80 **Small Business**	• Annual telecom spend of clients: $7-$400 million • Serves Global 500 and Fortune 1000 companies	• Serves clients across North America	Working with Department of Defense and Homeland Security *(complete as well as piecemeal outsourcing)*

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A few large vendors have global capabilities, while others operate in North America; most vendors have worked with the government (3/4)

Key Vendor Statistics

	Key Statistics	Clientele	Geographic Presence	Experience with Government Contracts
BBR Wireless	Sales: Not Avail. Employees: 45 **Not listed in CCR**	• Fortune 500 companies as well as small to mid sized companies • Number of wireless devices managed: 1000-15000	• Serves clients across North America	Yes, recently started *(only one or two services)*
Telebright	Sales: Not Avail. Employees: 22 Total telecom spend under management: $32 million **Small Business**	• Annual telecom spend of clients: $1 - $10 million	• Serves clients nationally	Yes *(complete outsourcing)*
BroadSource	Sales: Not Avail. Employees: 25 **Not listed in CCR**	• Focus on mid-market • Annual telecom spend of clients: $1 - $20 million	• Serves clients across North America	Yes *(only one or two services)*
Invoice Insight	Sales: Not Avail. Employees: 13 **Small Business**	• Mostly targets mid to large sized companies and government agencies; it can also cater to companies with spending levels below $400,000	• Serves clients across North America	Has worked with the US Federal, State and Local Government, including the Department of Defense Organization[1], Department of Homeland Security[1], US Army, US Coast Guard and GSA

Note: (1) Both government agencies availed TEM services for their wireline expenditure

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A few large vendors have global capabilities, while others operate in North America; most vendors have worked with the government (4/4)

Key Vendor Statistics

	Key Statistics	Clientele	Geographic Presence	Experience with Government Contracts
MBG	Sales: Not Avail. Employees: NA **Not listed in CCR**	• Serves Global 2000 companies • Average annual telecom spend by client: $10 million • Minimum number of wireless devices: 1000	• Serves clients in North America, Europe and Asia	Limited experience in the past, primarily with local authorities *(complete outsourcing)*
Abilita	Sales: Not Avail. Employees: 4 (also works with subcontractors) **Not listed in CCR**	• Annual spend of clients: $1-$5 million • Does not work with Fortune 1000 companies	• Serves clients across North America	Yes *(not as many services as for other clients)*
TSR	Sales: Not Avail. Employees: 40 Total telecom spend under management: $9-10 million **Small Business**	• Average telecom spend of clients: $0.9-$1.42 million per annum • Minimum number of wireless devices: 250 • Largest customer has over 10,000 mobile devices	• Serves clients across North America	Served the Treasury Department, Homeland Security, Customs Department, Transportation and Security Department and Navy *(complete outsourcing)*
Advocate Networks	Sales: $5 million Employees: 26 **Not listed in CCR**	• Annual spend of clients: $1.5-$20 million	• Serves clients nationally	Yes *(complete outsourcing)*

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Verifying capabilities and features of a vendor's system is critical, and a key challenge for customers

• Whether there is in-house technology or the vendor depends on third-party tools.

• Ability to manage different billing media (paper, CD, electronic).

• Degree of automation, number of reports generated and timeliness of delivery.

• Any value added service/capability that differentiates the vendor from competition.

Domain Expertise

• Experience and expertise of people managing the program.

• The telecommunications industry is extremely dynamic and requires highly specialized personnel to understand each core area.

Quality of Services/Technology

Key Considerations in Selecting a TEM Vendor

Carrier Relations and Industry Knowledge

• Number and size of clients managed by the vendors.

• Scope of work in case of large clients/government agencies – whether comprehensive services are being provided.

• Number of carriers with which the vendor has tie-ups to be able to access their billing mechanisms.

• Profitability and financial stability of the vendor.

• Whether it has access to adequate funds for scaling up business and investing in product development.

Financial Health

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Considering the wide range of choices that are available, enterprises must carefully evaluate what vendors are proposing

Implementation of an effective TEM program can take longer and is more difficult than what most vendors promise. It is not enough to buy the system. Ideally, the vendor should present methods and procedures to help make the program successful.

*"Vendors may say they can do something, but **you need to understand exactly how they do it**. We used case studies to highlight problematic areas that we felt were not managed effectively by the incumbent solution. Case studies were presented as questions to see how finalists' operations teams would deal with difficult challenges. We had them demonstrate how their software managed our specific challenges."* - James Knisely, Finance Manager, Delta Air Lines (2006)

Examples of Key Questions to be Asked for TEM Vendor Evaluation

- What level of detail is loaded for carriers?
    - Is it summary level, line-item or down-to-call detail?
    - Is this standard or are there extra fees for more detail?
    - How does this vary for different billing platforms?
- How does the system validate billing?
- What standard reporting is available for users to access current and historical data?
- What graphical interfaces and customized/ad-hoc reporting is available?
- Is there a dashboard view to track key performance indicators on billing status, expenses and assets?
- What types of cost savings are developed through the program and implementation process?
- Is there one point of contact where issues can be escalated and resolved?
- Does the vendor have a record for success and the ability to provide client references?
- Is the vendor planning for long-term growth or looking to be bought?

Source: Aberdeen (September 2006)

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GSA **U.S. General Services Administration**

TEM has typically produced significant positive returns on investment

Key Benefits of a Completely Outsourced TEM Solution

Typical Savings Breakdown

Invoice processing	5%
Auditing	7.4%
Contract Procurement	17.8%
Total	**30.2%**

Source: Sapien Partners

Cost reduction

- Cost savings are achieved due to process efficiencies and better contract negotiation.
- Typically, a good BPO provider of TEM will manage a program for 20-30% less (on an average) than the company's internal costs.

Best practices

- Best practices are integrated into TEM processes through the BPO provider's domain expertise and enhanced internal controls.

"We are seeing more and more demand for BPO as clients look to leverage our expertise, singular focus, experienced staff, and flexible and secure tools while they focus on supporting their clients." - Bob McMullan, Chief Executive Officer, Control Point Solutions

Compliance

- Reports can identify personal versus corporate use, and provide auditable documentation to comply with Sarbanes - Oxley and other regulations.

Telecom expenses, particularly wireless, are nearly invisible to enterprises due to lack of formal policies and controls for procuring, tracking and managing utilization of devices and plans.

Visibility and reporting

- Centralized technology platform enables faster information inflow within the company.
- Enterprises have access to the data and analysis required to control telecom expenses and drive sound business decisions.

A key issue for companies nowadays is misuse of mobile phones by employees for personal use. TEM can help in controlling such expenses.

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Savings can be achieved directly through price as well as through process efficiency and standardization

Key Benefits of Improved Visibility Resulting from Outsourced TEM

Improvement Area	Impact
Services cost	Cost reduction of 2-12% through informed, strategic sourcing and demand management.
Supplier management	Elimination of duplicate suppliers.
Contract compliance	Improved by 55%. 7% savings in contract pricing.
Regulatory compliance	Reporting rules are met.
Inventory management	Excess stock cut by over 50%. Inventory costs lowered by 5-50%.
Process cycles	Reduction in spend analysis cycles by 30-50%.

Key Benefits of Contract Management Resulting from Outsourced TEM

Improvement Area	Impact
Rebates/discounts	Improved by 25-30%.
Material/service costs	Reduced by 2-7%.
Contracting cycles	Cut by 50%.
Procedures and terms	Standardization of processes and terms to mitigate risks. Enforcement of policies.
Documentation and reporting	Reporting cycles are cut from days to minutes.
Administrative costs	Reduced by 25-30%.

Source: Aberdeen (February 2006)

- **Mid-market companies receive 3,000 telecom bills a year, while larger companies process more than 15,000. This volume presents a challenge in allocating the proper resources for auditing, reporting, and sourcing the technology, and also in the expertise required to maximize these opportunities.**

- **The error rate of most telecom bills is estimated to be between 7- 12%, and companies can realize substantial savings by paying close attention to these matters.**

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Various pricing strategies are followed by TEM vendors; fee could be based on total spend, number of devices or savings achieved

The customer pays a percentage of the savings garnered by the TEM vendor. Fees can range from 20-50% of savings. If no savings are found, then the company pays nothing. In essence, this model guarantees an ROI.

Standard software licensing pricing schemes also exist for TEM solutions. Companies pay a one-time fee with additional maintenance and/or update costs.

Percentage of savings

Fixed license fees

Typical Pricing Models for TEM Solutions

Scope defined fees

Fixed hourly/monthly fees
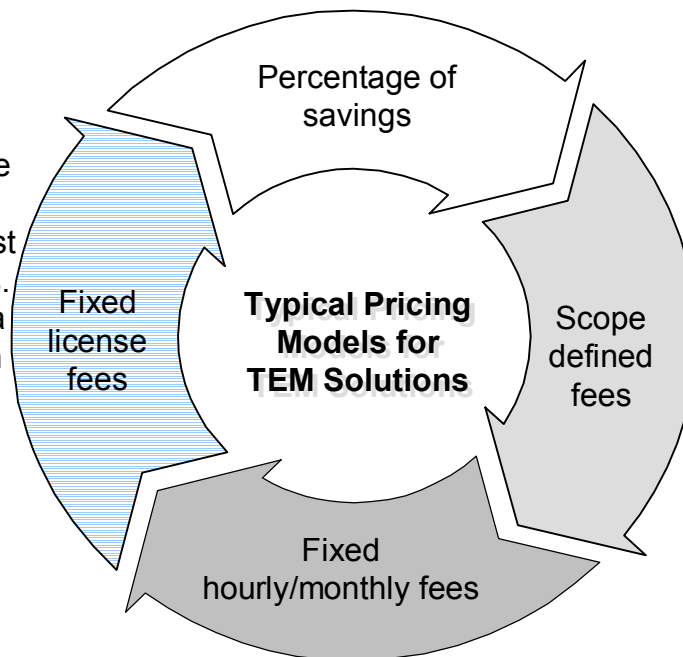
Contracts usually consider a number of variables that impact the scope of work. Variables include total spend, number of invoices or lines etc. Fees range from 1- 3% of the dollar amount of telecom spend under management.

Services, typically consulting services or labor-intensive manual processing, can be priced hourly or monthly. On a cost basis, accumulation of such fees may be considerably less than a fee based on savings of millions of dollars.

- **While various pricing models are followed by TEM vendors, in the case of wireless services, pricing is mostly based on number of devices.**

- **In some cases, a combination of two or three methods of pricing is used, based on scope of work.**

- **Many vendors also include "30-day-out" clauses to contracts. If an enterprise does not find the relationship to be as expected, the contract is terminated.**

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However, there could be a few risks in going for a pricing model which is dependent on cost savings

Key Disadvantages of a Pricing Model Based on Savings Achieved	

Disputes
- When fees are dependent on total savings accrued, there could be disputes as regard to what constitutes savings.

Savings Guarantees
- Savings guarantees that focus solely on telecom expenses are difficult to enforce. It is virtually impossible to know ahead of time what the error rate is on a particular clients billing.

Vendor Interest
- Firms earning a recurring percentage of savings may have little incentive to solve inherent process issues and provide value added reporting for spend visibility.

- **Historically, the sales proposition for TEM centered on the ability to reduce telecom expenses. Solutions were often sold with guarantees that the cost of the program would be paid through audit findings, optimization and sourcing.**

- **The savings categories include labor costs for processing of paper invoices, hidden costs for managers involved in approving bills, tracking missing bills, late payment penalties and unplanned service disconnects.**

- **However, many vendors have moved from this model to pricing based on percentage of spend or number of devices.**

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Customers of TEM have started looking beyond price when selecting a vendor

- Competition in the US TEM industry is fierce. Vendors need an edge to win business and grow customer base.

- A few major players such as ProfitLine, Tangoe, Control Point Solutions and Vercuity have been moving towards the BPO model to establish themselves as full service providers. Many other vendors are now following the trend.

- Given the fragmented nature of the industry, there is scope for consolidation in near future as companies try to gain market share.

Key Bases of Competition in the TEM Industry

Quality of Services

With increasing complexity of wireless expense management, companies are looking for best-of-breed vendors.

Price

Price has historically been the key basis of competition, resulting in varied pricing models developed by vendors in order to win customers.

- Price is not always the deciding factor in selecting a vendor.

- While it used to be the most important factor in winning business for vendors, customers are increasingly placing more emphasis on quality of services.

  - Companies that have used TEM believe that lowest price does not always equate to the best value.

  - Suppliers that appear to be quoting a price for the same capabilities may be processing different levels of detail from carriers.

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The supply market analysis provides several implications for sourcing strategy

IMPLICATIONS FOR SOURCING STRATEGY BASED ON MARKET ANALYSIS

REF #	KEY FINDING	OPPORTUNITY	SOURCING IMPLICATION

1	• The TEM industry is comprised of both:
	  • Wireless Providers - "Carriers"
	  • TEM Service Providers
	    • Diversified Providers
	    • Pure-Play TEM Providers
	    • Wireless TEM Providers
		• Many options to develop relationships with suppliers from full service to specific services
		• Ability to work with many small businesses providing niche services
		• Use of TEM/Carrier because they understand carrier cost structure and processes better
			• Organizations should carefully consider the strategic relationships they want between themselves and the wireless carriers and with any organization or supplier performing TEM services
			• To what extent should the TEM supplier have other capabilities beyond that of providing wireless TEM services?
			• Should government develop direct relationships with wireless providers and separate relationships with TEM service providers?
			• Can TEM service providers get the same negotiation leverage as government with the wireless providers?
			• Conflicts of interest may limit the use of carrier as TEM

2	• TEM suppliers' capabilities are improving and there are key differences between players	• Get more value from TEM • Choose between suppliers that fit best GSA requirements	• TEM requirements need to be well defined • Selection criteria needs to be well defined to identify differences between vendors • Selection process need to be well defined • Consider sourcing more from TEM vs. carrier

3	• Three service delivery options are typically available to organizations:
	  • Licensed TEM software providers
	  • Hosted software/managed application service providers (ASPs)
	  • Full service TEM providers
		• Improved integration of wireless TEM services with the mission and operations of the FSSI agency	• Will the emphasis of the sourcing effort be focused on purchasing of technology (licensed software solution), outsourced services (full-service TEM) or a combination of technology and services (application service provider)?
			• FSSI organizations need to determine what TEM services they want to keep, or can afford to do internally, and which TEM services will be done outside the organization (outsourced)

4	• TEM Market is a rapidly growing, nascent industry with quickly changing market dynamics • Complexity of wireless technology and management is fueling the growth	• Incorporation of new TEM technologies and practices into FSSI agencies	• Given that the industry is still nascent and maturing, capabilities and risk of vendors must be carefully assessed when making sourcing decisions • What flexibilities, safeguards and risk mitigation techniques should be included in TEM contracts in preparation for expected TEM market changes

The supply market analysis provides several implications for sourcing strategy

IMPLICATIONS FOR SOURCING STRATEGY BASED ON MARKET ANALYSIS

REF #	KEY FINDING	OPPORTUNITY	SOURCING IMPLICATION
5	• Number of TEM suppliers is increasing and as market grows, it is getting more fragmented	• TEM choices are increasing and opportunity to select right vendor is increasing • Unit cost is decreasing as the vendors compete against each other- there must be an opportunity to reduce TEMs profits per unit • Reduction of wireless cost	• Select a vendor that is likely to survive industry consolidation • Compete contracts between suppliers

6	• The core TEM services are:
	  • Usage Reporting
	  • Invoice Management
	  • Rate Optimization
	  • Inventory Management
	  • Ordering & Procurement
	  • Auditing
	  • Bill Payment
		• Improved management and reporting of wireless services and inventory
		
		• Increased ability to meet agency wireless requirements and needs at a lower total cost of ownership
			• What is the relative importance of each of these services?
			• Which services should be done in-house vs. by an outside TEM service provider?
			• Should agencies allow the TEM vendors to also negotiate directly with the wireless providers?

7	• Different TEMs types are evolving	• Use of more specilized TEM vendor with better capabilities for GSA	• Agencies need to decide which parts of the internal processes are going to be outsourced in order to closely align TEM supplier type with agency requirements
8	• Most companies providing TEM services in the US are small in size and lack the scale to cater to large customers • There are significant economies of scale in TEM industry, which favor larger BPO providers	• Expanded supplier base well-suited to meet the needs of large Federal agencies	• Verifying capabilities and features of a vendor's system is critical, and a key challenge for customers • FSSI agencies should consider what information is needed to evaluate potential suppliers from a maturity and "economies of scale" perspective • A strong supplier performance management approach is important and necessary to track and monitor suppliers to minimize the risk of problems and to validate total cost savings

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IMPLICATIONS FOR SOURCING STRATEGY BASED ON MARKET ANALYSIS

REF #	KEY FINDING	OPPORTUNITY	SOURCING IMPLICATION
9	• Larger TEMS enjoy economies of scale	• Lower unit cost / managed unit • Automation of process drive down process and management costs	• Large TEM providers have better negotiation power • Second source TEM provider should be considered

10	• TEM has typically produced significant positive returns on investment in 4 ways
	  • Cost Reduction
	  • Improved Compliance
	  • Implementation of Best Practices
	  • Improved Reporting & Visibility
		• Reduced total cost of wireless operations and ownership
		• Improved management reporting and visibility into wireless spend and usage
			• How will the "value" of a TEM supplier be measured and tracked throughout the contract period of performance?
			• What sourcing "tactics" will be implemented on the TEM supplier, or on the agency users (through the TEM provider) to accomplish the sourcing objectives?

11	• Savings can be obtained through price as well as process efficiency and standardization	• Reduced wireless cost of ownership	• FSSI agencies should consider how the contract pricing strategy affects the TEM vendor's incentive to manage wireless costs • How should the TEM supplier interface with agency processes such as ordering, billing and management reporting in order to be effective and efficient?
12	• TEM suppliers are partnering with carriers	• Software and data collection integration is improving	• How much will the TEM squeeze the carrier if they are partners?
13	• Government bureaucracy prevents some vendors servicing government effectively	• Improve how TEM is procured and how TEMs can do business with government	• Simplify procurement and contracting processes

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IMPLICATIONS FOR SOURCING STRATEGY BASED ON MARKET ANALYSIS

REF #	KEY FINDING	OPPORTUNITY	SOURCING IMPLICATION
14	• TEM proposals need to be evaluated carefully • Quality of service is also a critical element for success	• Use of best practices and clear selection criteria is key • Identify required quality of service from carrier and TEM	• The evaluation process and criteria need to be well defined • Benchmarking of prices and capabilities is required • Evaluation criteria needs to include quality of services at both level; carrier and TEM
15	• Well executed and managed TEM saves costs significantly	• Reduce overall Telecom expense • Develop management practices for TEM	• Break down the benefits case into demand management, process improvement, price reduction and cost recovery
16	• TEM vendors have a number of pricing options, including performance based • There have been disputes on performance based compensation	• Select pricing option that drives the most value in the short and long term • Use fixed price when it makes sense	• Benchmarking of prices and benefits cases need to be done carefully • Right compensation model is critical for success • Contracting has to be flexible to change compensation models as needed

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